

REMARKS

The Office Action mailed September 9, 2005 has been reviewed and carefully considered. The Examiner's reconsideration is respectfully requested in view of the above amendments and the following remarks.

Claims 1-19 are pending in the present application.

By the Office Action, claims 1-19 were rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,757,248 to Li et al. (hereinafter Li).

Applicant respectfully traverses the rejection.

Li addresses the issue of network congestion, and focuses on avoidance of congestion, particularly in wireless or mobile networks via an algorithm (Fast Recovery Plus algorithms). As explained in Li (e.g., see Col. 2, line 54 to Col. 3, line 9), network congestion involves when many sources simultaneously send traffic over the network to more than one destination; if too much of this traffic converges on a single router in too short a time, the limited buffer capacity of the router will be unable to cope with the volume and the router will reject/destroy the packets. Network performance degrades, and the affected sources have to retransmit the lost or rejected packets. Re-transmissions however, result in fewer resources for handling those portions of messages still waiting to be transmitted for the first time, which causes drastic increase in network delays and a decrease in throughput. Accordingly, it is the ultimate focus in Li to avoid retransmissions of data packets.

Firstly, it should be abundantly clear that avoidance of network congestion as in Li is completely different from maintaining a data stream during a loss of a physical layer, as in the present invention. The two are very different concepts. Li is triggered by **data packet loss**, whereas the present invention is triggered by a **loss of physical layer**.

Please note the definition of a “physical layer” as comprising level one in the seven level Open Systems Interconnection Reference (OSI) model of computer networking which performs services requested by the data link layer and is responsible for establishment and termination of a connection to a communications medium. The loss of data packets is as explained above, namely destruction/rejection of packets by the router during network traffic overload.

In other words, the problem being addressed in Li is an **overloaded** network (network experiencing data packet overflow in congested routers). This is not equivalent to a network which experiences a loss of a physical layer (loss of connection) which is the problem addressed in the present invention.

There is no disclosure, implied or suggested, anywhere in Li mentioning the issue of a loss of a physical layer, much less maintaining a steady data stream during a loss of a physical layer as taught in the present invention. Namely, Li fails to disclose or suggest at least ensuring maintenance of a steady data stream from the customer premise unit to the customer **during a loss of a physical layer** between the server and the customer premise unit, essentially as claimed in claims 1 and 11.

Indeed, closer examination of Li shows Li’s approach to congestion avoidance mainly involves distinguishing between packet loss due to Bit Error Rate (BER) from loss due to ‘actual’ congestion. Li takes advantage of the fact that for wireless networks, most lost packets are simply due to errors in the transmission of packets. Packet loss due to BER is not treated as congestion and thus transmission rate is not slowed unnecessarily in those cases. It is in this way that Li accomplishes its asserted ‘improved throughput of connection and TCP performance,’ since if it is determined that packet loss is due to

BER, the TCP would not have to avoid congestion since congestion does not, in actuality, exist. See e.g., Col. 10, line 54 to Col. 12, line 31. However, Li's approach to simply minimize the number of congestions ("genuine" congestions to which a TCP module must react) in a network is not analogous to ensuring maintenance of a steady data stream during a loss of a physical layer, as in the present invention.

Applicant notes the Examiner has cited Col. 15, lines 20-67 and Col. 16, lines 1-20 as allegedly disclosing the means to ensure maintenance of a steady data stream during a loss of physical layer. However, Applicant has reviewed the cited portions of Li and finds no such disclosure. Namely, Col. 15 and Col. 16 simply discuss usage implementations of the Fast Recovery Plus (FR+) algorithm of Li in a packet switched TCP over ATM network, and a TCP over ISF network, ATM network and a satellite network. Significantly, Col. 16 goes on to state that when the FR+ algorithm is installed in such networks, the "algorithm as described with reference to FIG. 3 can maintain a high data throughput ... while minimizing the high packet loss rate and the number of congestions in the network." Note that such algorithm as described with reference to FIG. 3 is exactly what is discussed above, with reference to Cols. 10-12.

While Li does recite an ability to "maintain a high data throughput" (Col 16, line 7) please note it is doing so by enhancing the efficiency when data packets overflow in the congested routers. Again, the problem addressed in the Li is how to maintain a high data throughput in the event of an **overload of data** (packets), whereas in the present invention, the problem addressed is how to maintain a steady data stream in the event of a **loss of connection** (physical layer).

At least in light of the above arguments, it is respectfully asserted that claims 1 and 11 are allowable over Li. Claims 2-10 and 12-19 depend either directly or indirectly on claims 1 and 11, respectively. As such, the Applicant respectfully submits that the dependent claims are patentable and nonobvious for at least the reasons given above for claims 1 and 11.

Accordingly, the Applicants respectfully request withdrawal of all the rejections under 35 U.S.C. §102(e), and allowance of pending claims 1-19 on the merits.

In view of the foregoing amendments and remarks, it is respectfully submitted that all the claims now pending in the application are in condition for allowance.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 1-19 are patentable and nonobvious over the cited reference. Consequently, the Applicants respectfully request reconsideration and withdrawal of the rejections and allowance of the application. Such early and favorable action is earnestly solicited.

No fees are believed to be due at this time. The office is hereby authorized to charge any additional fees which may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 07-0832.

Respectfully submitted,

Dated: November 30, 2005

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